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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,240	08/01/2001	Pierte Roo	MP0039CIP	4035
26703	7590	12/14/2005	EXAMINER	
HARNESS, DICKEY & PIERCE P.L.C. 5445 CORPORATE DRIVE SUITE 400 TROY, MI 48098			YUN, EUGENE	
			ART UNIT	PAPER NUMBER
			2682	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/920,240	Applicant(s) ROO ET AL.	
	Examiner Eugene Yun	Art Unit 2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-110 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-110 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dankberg (US 5,596,439) in view of Patel (US 5,175,764).

Referring to Claim 1, Dankberg teaches an electrical circuit in a communications channel comprising:

A first sub circuit having a first input for a composite signal, the composite signal including a transmission signal component and a receive signal component (see col. 4, lines 20-22 and input from Receiver to Interference Canceller in fig. 5);

A second input for a replica transmission signal (see input from Source Information Signal in fig. 5); and

an output for a receive signal which comprises the composite signal minus the replica signal (see col. 4, lines 22-26).

Dankberg does not teach a second sub circuit for controlling a common-mode shift current, so that the magnitude of the composite signal does not exceed a predetermined value of an operating parameter of the electrical circuit. Patel teaches a third input which receives a common-mode shift current and a second sub circuit for controlling a common-mode shift current, so that the magnitude of the composite signal

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does not exceed a predetermined value of an operating parameter of the electrical circuit (see col. 2, lines 44-52 and col. 5, lines 12-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Patel to said method of Dankberg in order to better prevent the use of excessive amounts of power.

Claims 37 and 74 have similar limitations to claim 1.

Referring to Claim 12, Dankberg teaches an electrical circuit in a communications channel comprising:

an active resistive summer which produces a receive signal which comprises the composite signal minus the replica signal (see col. 4, lines 22-26), the composite signal including a transmission signal component and a receive signal component (see col. 4, lines 20-22 and input from Receiver to Interference Canceller in fig. 5).

Dankberg does not teach a common-mode shift current control circuit which controls the magnitude of the composite signal. Patel teaches a common-mode shift current control circuit which controls the magnitude of the composite signal (see col. 2, lines 44-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Patel to said method of Dankberg in order to better prevent the use of excessive amounts of power.

Claims 48 and 85 have similar limitations as claim 12.

Referring to Claim 24, Dankberg teaches an electrical circuit in a communications channel comprising:

an active resistive summer having a first input for a composite signal, the composite signal including a transmission signal component and a receive signal component (see col. 4, lines 20-22 and input from Receiver to Interference Canceller in fig. 5), a second input for a replica transmission signal (see input from Source Information Signal in fig. 5), and an output for a receive signal which comprises the composite signal minus the replica signal (see col. 4, lines 22-26).

Dankberg does not teach a common-mode current circuit which controls the magnitude of the common-mode shift current to thereby control the magnitude of the composite signal. Patel teaches a third input which receives a common-mode shift current and a common-mode current circuit which controls the magnitude of the common-mode shift current to thereby control the magnitude of the composite signal (see col. 2, lines 44-52 and col. 5, lines 12-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Patel to said method of Dankberg in order to better prevent the use of excessive amounts of power.

Clams 61 and 98 have similar limitations as claim 24.

Referring to Claims 2, 13, 25, 38, 49, 62, 75, 86, and 99, Patel also teaches a power supply voltage source of a predetermined magnitude, wherein the operating parameter is the predetermined magnitude of the power supply voltage source (see col. 6, lines 50-54).

Referring to Claims 3, 15, 28, 39, 52, 65, 76, 89, and 102, Patel also teaches a common-mode feedback circuit (see col. 10, lines 60-65).

Referring to Claims 4, 16, 29, 40, 53, 66, 77, 90, and 103, Patel also teaches an operational amplifier (see col. 7, lines 49-51).

Referring to Claims 5, 17, 30, 41, 54, 67, 78, 91, and 104, Patel also teaches the operational amplifier having a first input which receives a first differential component of the composite signal, a second input which receives a second differential component of the composite signal, a third input which receives a common-mode voltage signal, and an output which provides a common-mode shift current control signal (see col. 6, lines 36-45).

Referring to Claims 6, 18, 31, 42, 55, 68, 79, 92, and 105, Patel also teaches the common-mode feedback circuit including a pair of transistors, each transistor having a respective input and wherein the output of the operational amplifier is coupled to the respective input of each of the transistors (see col. 6, lines 15-21).

Referring to Claims 7, 19, 32, 43, 56, 69, 80, 93, and 106, Patel also teaches the second sub-circuit including a current source (see col. 6, lines 18-22).

Referring to Claims 8, 20, 33, 44, 57, 70, 81, 94, and 107, Patel also teaches the current source providing a constant common-mode shift current control signal (see col. 6, lines 18-22).

Referring to Claims 9, 21, 34, 45, 58, 71, 82, 95, and 108, Patel also teaches a resistor divider (see col. 6, lines 46-50).

Referring to Claims 10, 22, 35, 46, 59, 72, 83, 96, and 109, Patel also teaches the resistor divider comprising a plurality of resistors, each of the resistors having a respective characteristic resistance (see col. 6, lines 46-50).

Referring to Claims 11, 23, 36, 47, 60, 73, 84, 97, and 110, Patel also teaches the resistor divider providing a common-mode shift current control signal that is related to the respective resistances of each of the resistors (see col. 6, lines 46-50).

Referring to Claims 14, 26, 50, 63, 87, and 100, Patel also teaches the common-mode shift current control circuit controlling the magnitude of the composite signal to be less than the magnitude of the power supply voltage source (see col. 6, lines 54-63).

Referring to Claims 27, 51, 64, 88, and 101, Patel also teaches the magnitude of the common-mode shift current control circuit controlling the magnitude of the composite signal to be equal to the magnitude of the power supply voltage source (see col. 6, lines 54-63).

Response to Arguments

3. Applicant's arguments filed 9/23/2005 have been fully considered but they are not persuasive.

The applicant argues that the combination of the Dankberg and Patel references does not teach all the limitations of the independent claims. Firstly, the term "active resistive summing circuit" is not specifically defined in the claims or the specification. Therefore, the examiner assumes the term to mean a simple adder circuit within an echo cancellation circuit, which the Dankberg reference clearly teaches.

The applicant's arguments only stated that the combination of the Dankberg reference and the Patel reference does not teach the limitations of the independent claims. Nowhere in the arguments did it state specifically which limitations are not

taught by the references. For example, the arguments never stated that the Patel reference does not teach “a third input which receives a common-mode shift current and a second sub circuit for controlling a common-mode shift current, so that the magnitude of the composite signal does not exceed a predetermined value of an operating parameter of the electrical circuit” (claim 1). Therefore, the examiner assumes that the applicant agrees that the Patel reference teaches the limitations of “a third input which receives a common-mode shift current and a second sub circuit for controlling a common-mode shift current, so that the magnitude of the composite signal does not exceed a predetermined value of an operating parameter of the electrical circuit”.

In the previous interview with attorney Andrew Bateman, the examiner pointed out his belief that the limitations taught by the Dankberg reference are limitations that teach a simple echo cancellation circuit known in the art. The examiner still currently stands by his belief. The Patel reference also teaches echo cancellation as shown in col. 5, lines 7-20. Therefore, the Dankberg and Patel references can in fact be combined as the combination teaches elements that can be added to an echo cancellation circuit in order to improve the performance.

For the above reasons, the examiner stands by his rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Yun whose telephone number is (571) 272-7860. The examiner can normally be reached on 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571)272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

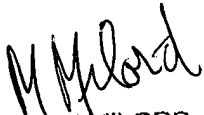
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Eugene Yun
Examiner
Art Unit 2682

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